

WHAT IS CLAIMED IS:

1. A recycled ABS resin obtained by recycling an ABS resin formed into parts by injection molding of a virgin material thereof and  
5 used mainly in electric and electronic equipments.

2. The recycled ABS resin according to Claim 1, wherein the Izod impact strength of the recycled ABS resin is at least 0.8 times as much  
10 as the Izod impact strength of the virgin material thereof, and the melt flow rate of the recycled ABS resin is at most 1.2 times as much as the melt flow rate of the virgin material thereof.

3. The recycled ABS resin according to Claim 1, wherein a color difference ( $\Delta E_{ab}^*$ ) between the recycled ABS resin and the virgin material is smaller than 1.0.  
15

4. The recycled ABS resin according to Claim 1, wherein neither a flame retardant nor a reinforcing material is filled into the parts.  
20

5. The recycled ABS resin according to Claim 1, which is obtained by a recycling process comprising the step of grinding the parts while conducting screening by means of a screen having a  
25

mesh of 4 to 10 mm.

6. The recycled ABS resin according to Claim  
5, which is obtained by the recycling process  
comprising the step of washing 1 part by mass of  
the ground material with at least 10 parts by mass  
of water.

7. The recycled ABS resin according to Claim  
6, which is obtained by the recycling process  
comprising a drying step by means of a centrifugal  
dehydration system to reduce a water content to  
at most 0.3 % by mass.

8. The recycled ABS resin according to Claim  
7, which is obtained by the recycling process  
comprising the step of removing low-density  
products having a bulk density lower by at least  
0.5 than the bulk density of the recycled ABS  
resin by air classification.

9. The recycled ABS resin according to Claim  
8, which is obtained by the recycling process  
comprising the step of removing high-density  
products having a true density higher by at least  
0.5 than the true density of the recycled ABS  
resin by gravity separation.

10055973.012805

10. The recycled ABS resin according to  
Claim 9, which is obtained by the recycling  
process comprising the step of removing metals by  
means of a magnet having a residual magnetic flux  
5 density of at least 1 tesla.

11. The recycled ABS resin according to  
Claim 10, which is obtained by the recycling  
process comprising the step of removing metals by  
10 means of a metal detecting and removing device.

12. A recycled ABS alloy resin comprising  
the recycled ABS resin according to Claim 1 and at  
least one resin selected from the group consisting  
15 of PC, PVC and PBT.

13. The recycled ABS alloy resin according  
to Claim 12, which is obtained by a process  
comprising the steps of:  
20 fully blending the recycled ABS resin  
according to Claim 1 with at least one resin  
selected from the group consisting of PC, PVC and  
PBT;

melt-mixing the blend; and  
25 pelletizing the melt mixture.

14. A process for producing a recycled ABS

4005593.01E002

alloy resin, which comprises the steps of:

(i) blending a recycled ABS resin with at least one resin selected from the group consisting of PC, PVC and PBT;

5 (ii) melt-mixing the blend resulting from the step (i); and

(iii) pelletizing the melt mixture resulting from the step (ii)

10 wherein the recycled ABS resin used in the step (i) is obtained through the steps of:

(1) grinding an ABS resin molded product and screening the ground resin by a screen having a mesh of 4 to 10 mm to obtain a ground product;

15 (2) washing the ground product resulting from the step (1) with water in a proportion of at least 10 parts by mass per 1 part by mass of the ground product; and

20 (3) drying the water-washed ground product resulting from the step (2) to a water content of at most 0.3 % by mass.

15. The process according to Claim 14, which further comprises the step of removing low-density products having a bulk density lower by at least  
25 0.5 than the bulk density of the recycled ABS resin by air classification as a step (4).

1005543-012800

16. The process according to Claim 15,  
wherein the step (4) is conducted after the step  
(3).

5 17. The process according to Claim 14, which  
further comprises the step of removing high-  
density product having a true density higher by at  
least 0.5 than the true density of the recycled  
ABS resin by gravity separation as a step (5).

10

18. The process, according to Claim 17,  
wherein the step (5) is conducted at the same time  
as the step (2).

15 19. The process according to Claim 14, which  
further comprises the step of removing metals by  
means of a magnet having a residual magnetic flux  
density of at least 1 tesla as a step (6).

20 20. The process according to Claim 19,  
wherein the step (6) is conducted after the step  
(3).

25 21. The process according to Claim 14, which  
further comprises the step of removing metals by  
means of a metal detecting and removing device as  
a step (7).

1005593.01302  
200270 EX65501

22. The process according to Claim 21,  
wherein the step (7) is conducted after the step  
(3).

5        23. The process according to Claim 14,  
wherein the Izod impact strength of the recycled  
ABS resin is at least 0.8 times as much as the  
Izod impact strength of the virgin ABS resin.

10       24. The process according to Claim 14,  
wherein the melt flow rate of the recycled ABS  
resin is at most 1.2 times as much as the melt  
flow rate of the virgin ABS resin.

15       25. The process according to Claim 14,  
wherein a color difference ( $\Delta E_{ab}^*$ ) between the  
recycled ABS resin and the virgin ABS resin is  
smaller than 1.0.

20250303 10:46:50